DLNR - DIVISION OF AQUATIC RESOURCES

FREE!

CURRENT LINE

DAR STATEWIDE PROJECT INFORMATION NEWSLETTER VOLUME 3, NUMBER 1, April 1999

NEW WEB SITE

CURRENT LINE ON THE WEB!

The Department of Land & Natural Resources has a web site under which you can find information on the Division of Aquatic Resources and all the current and back issues of *Current Line*. The web address for *Current Line* is:

www.state.hi.us/dlnr/dar/current_line.htm

LICENSES, RULES & REGULATIONS

NEW AND IMPROVED FISH CATCH REPORTS

Commercial fishermen have been providing DAR with fish catch information with the same monthly fish catch reports for almost 50 years. DAR is now in the process of updating these forms to include more specific information on how much time and fishing gear were used to determine the fishermens' efforts toward catching targeted fish species. DAR is also revising some of the existing catch report forms and making new ones for some specific fisheries. The fisheries that DAR needs the most information from will get fishery-specific forms (e.g. Bottomfish). All this information is necessary to gain a better understanding on the present health of Hawaii's marine resources on which to base management decisions. This data is important to help us sustain and improve our fishery resources so that fishermen can continue fishing for them.

For this reason, the State requires that every individual (captain or crew) engaged in the taking, selling, or offering for sale any marine life for commercial purposes (including charter services), **must obtain a commercial marine license**. In addition, commercially licensed fishermen are also required to submit a **monthly** fish catch report**.** However, to eliminate report duplication, only one person from each boat is required to submit the monthly catch report for the entire crew.

Please keep in mind that a commercial fisherman's report **is CONFIDENTIAL**. The Hawaii Revised Statutes Chapter 189-3 states "Any information submitted to the department by any person in compliance with any requirement under this section shall be confidential and shall not be disclosed," except under court order, subpoena from the Attorney General, by written consent of the person, or by cooperative agreement with U.S. government agencies for the sole purpose of fishery management.

1998 FISHING CITATIONS

DLNR's Division of Conservation and Enforcement (DOCARE) officers face an enormous challenge when it comes to enforcing laws intended to protect Hawaii's natural resources. A DOCARE officer is a law enforcement officer that enforces laws and rules not only regarding Aquatic Resources (Sport and Commerical fishing), but also in Forestry and Wildlife, State Parks, Land Management, Historic Sites, Boating and Ocean Recreation, and Water Resource Management. These officers have to split their attention in seven different directions! DOCARE officers detect violations by conducting patrols, surveillances, inspections and investigations. Violators are apprehended and are either warned, issued a citation or arrested.

To give you an idea on the enormity of their task, the following tables comprise a list of just the fishing-related citations (minus those for forestry, wildife, land-management, etc...) that were issued in 1998 on OAHU ONLY. These represent the cases that were ACTUALLY PROCESSED FOR PROSECUTION and does not include warnings (both verbal & written), nor all the total number of criminal investigations, and related aquatic resources violations. Oahu had only 26 officers to begin with in January 1998. 13 more officers were hired in March 1998, thanks to the Governor's Ocean Initiative, but they did not go in the field until June or July due to the amount of time needed for training.

"Regulated Fish Species " *Fishing Citations Issued in 1998 on Oahu ONLY:*

Violation	*Total Citations*
Restricted Taking of Iao	1
Prohibited Possession/Sale of Undersized Papio	14
Bag limit on Papio	1

INDEX

1151 PUNCHBOWL STREET, ROOM #330, HONOLULU, HAWAI'I 96813
587-0100

Violation	*Total Citations*
Prohibited Activity, Papio less than 7 inches	11
Catch/Take/Possession/Bag Limit on Oama (over limit)	2
Catch/Take/Possession of Moi (out of season)	3
Undersized Moi	3
Prohibited Activity/Restriction on Oopu	2
Unlawful Taking/Possession/Sale of Mullet during closed season	1
Unlawful taking of Mullet	1

"Spiny Lobsters, Kona Crab, Samoan Crab" *Citations issued in 1998 on Oahu ONLY:*

Violation	*Total Citations*
Restricted Taking of Undersized Spiny Lobster	2
Unlawful taking of crustaceans with eggs (spiny lobster)	3
Take/Kill/Sale of Crustacean during closed season	16
Restrictions on Samoan Crab	3
Undersized crab	7

"Tako, Opihi, & Oysters " *Fishing Citations Issued in 1998 on Oahu ONLY:*

Violation	*Total Citations*
Take/Possession of Undersized Tako	2
Restricted Taking of Undersized Opihi	1
Prohibited Taking of Oysters	1

"Limu (Ogo), Live Rock & Stony Coral" *Citations Issued in 1998 on Oahu ONLY:*

Violation	*Total Citations*
Taking Over 10 lbs. of Limu for Commercial Use	2
Taking Over 1 lb. of Limu per Person for Home Consumption	8
Taking Limu with Reproductive Nodes	4
Taking of Limu with Holdfasts	2
Taking of Live Rock/Stony Coral	6

"Illegal Use of Fishing Gear" *Citations issued in 1998 on Oahu ONLY:*

Violation	*Total Citations*
Unattended Gill Net (No inspection every 2 hours)	2
Unattended Gill Net	8
Minimum Size of Stationary Gill Net	1
Prohibited Fishing with Gill Net	2
Gill Netting in Haleiwa	2
Fishing with Illegal Trap	2
Posession of Fine Mesh Thrownet	21
Fishing with Fine Mesh Thrownet	30
Unlawful/Prohibited Activity - fishing with Spear	10

"LICENSE and PERMIT" *Citations Issued in 1998 on Oahu ONLY:*

Violation	*Total Citations*
Taking Baitfish without a License	1
Freshwater Fishing without a License	1
No Floatation Device	3
No Bottom Fishing Vessel ID No.	1
Failure to show Commerical License	2
Engaging in Commercial Fishing without a License	1
No Permit to Take Aquatic Life for Aquarium purposes	1
No Fishing License	2
No Valid Fishing License	1
Failure to issue Marine Receipt in duplicate	4
Failure of Commercial Marine Dealer to Report	1

"Other" *Citations Issued in 1998 on Oahu ONLY:*

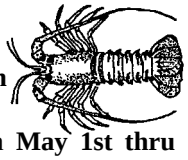
Violation	*Total Citations*
Sale of Marine Life during Closed Season	1
Prohibited Taking/Sale/Possession/Offer for sale of Marine LIfe	1
Non-commercial Bag Limit	1
Minimum Size of Fish	1
Prohibited Activities (General)	1
Prohibited Activity in Waialua Bay	4
Prohibited Activity in Waikiki MLCD	12
Prohibited Fishing Activities in Pokai Bay	1
Prohibited Activities in Pupkea MLCD	2
Prohibited Activities in Wahiawa PFA	9

REMINDERS

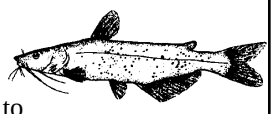
Mullet Season (for *'ama'ama* or striped mullet) is **open** as of March 1st and will run till **November 30th**. Remember that minimum size for spear and/or sale is 7 inches.

Waikiki Diamond Head Fishery Management Area is **CLOSED** to fishing from January 1, 1999 to December 31, 1999. The area will be open to fishing from January 1, 2000 to December 31, 2000.

Moi & Moi-li`i Season will be closed between **June 1st and August 31st**. These animals spawn during the summer months so let's give them a break to help us increase their numbers.



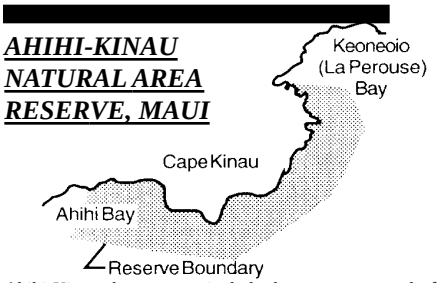
Spiny Lobster Season Slipper Lobster Season & Kona Crab Season will be closed between **May 1st thru August 31st**. These animals spawn during this time, so let's give them a chance to breed and multiply.



Nuuanu Catfish Please remember to put in your application cards for the May 1998 Catfish Opening and renew your freshwater fishing license if you need to. The bag limit is two catfish per angler. Cards should be available around April 1st in the **DLNR Visitor Center** in the Kalanimoku Building, Room 131, and at other licensing agents. The deadline for applications is April 24th.

INSHORE PROJECTS

AHIHI-KINAU NATURAL AREA RESERVE, MAUI



Ahihi-Kinau shore waters include the waters seaward of Cape Kinau a distance of 2000 to 3000 feet as shown above

The Ahihi-Kinau Natural Area Reserve (NAR), set on the last historic lava flow on Maui, was established in 1973. Ahihi-Kinau contains five natural communites including anchialine pools with a high diversity of rare Hawaiian shrimps (i.e. ʻōpaeʻula), a unique coastal lava tube community that provides habitat for native Hawaiian cave animals, and 900 acres of nearshore waters off Cape Kinau. NARs are different from Marine Life Conservation Districts (MLCDs) in that these areas are prime examples of relatively unmodified/unaltered native ecosystems which are set aside to protect "the best of what's left" of Hawaii's unique native environments. Therefore, fishing or taking of marine life is NOT ALLOWED.

Surveys done in 1972 by the Division of Fish and Game (now known as Division of Aquatic Resources) staff revealed dense growths of finger corals (Porites compressa) at 4 out of 6 survey sites along with a good diversity of fish species. In 1998 (26 years later), these same areas were again surveyed with some notable results. Fish populations in the remonitored areas appear to have decreased from 1364 fish per acre in 1972 to 962 fish per acre in 1998. The following tables give some examples on the differences between the numbers of specific fish seen in 1972 and 1998 at Ahihi-Kinau:

Fish that have increased or barely changed (<5%) in numbers per acre

Fish	*1972 Survey Numbers*	*1998 Survey Numbers*	*Diet*
C. strigosus (kole)	185	177	algae
C. vanderbilti (black-fin damsel)	72	98	zooplankton, copepods
A. nigofuscus (lavendar tang)	18	180	filamentous algae
P. multifasciatus (moana)	29	60	small crabs, fish, shrimp

Fish that have decreased (6% to 900%)) in numbers per acre

Fish	*1972 Survey Numbers*	*1998 Survey Numbers*	*Diet*
C. ovalis (blue damsel)	100	6	wide variety (shrimps, crustacean larvae, worms, fish eggs, etc.)
M. flavolineatus (white weke)	92	10	wide variety
A. abdominalis (mamo)	91	22	algae, zooplankton, crustaceans
D. albisella (aloiloi)	67	10	wide variety
M. vanicolensis (red weke)	67	22	echinoderms, worms, crustaceans
C. hanui (chocolate dip damsel)	64	24	"
T. duperrey (saddleback wrasse)	64	48	echinoderms, worms, crustaceans
Z. flavescens (yellow tang)	57	38	algae

As you can see, most of the fish appear to have decreased in numbers from 1972. DAR staff conducting the re-monitor surveys in 1998 did not observe the dense growths of finger corals as it was noted on 4 out of the 6 original survey sites in 1972. Instead of lush coral beds, the habitat in these areas now consist mostly of coral rubble. Since finger corals are very fragile, it is speculated that powerful storms like Hurricane Iniki (1992) and Hurricane Iwa (1982) caused the destruction of these vast coral beds within the last 26 years. The apparent loss of this finger coral habitat may explain the observed changes in fish populations.

Since the habitat now consists of coral rubble, this provides a lot of surface area for fine algal growth and other organic matter, which is an excellent food source for fishes such as the kole and lavendar tang. As a result, you can see from the previous tables that the numbers for these fish have either increased or remained relatively stable. This kind of coral rubble habitat may not have a wide variety of the larger invertebrates, but animals such as small shrimp, crabs, copepods, and other zooplankton can thrive providing a food source for fish like the black-fin damsel and moana, whose numbers have also increased. Most of the other fish whose numbers have decreased require a wider variety in diet than what can be found in coral rubble habitat. These fish probably moved into areas that are able to provide the right kind of diet for them, such as areas with richer coral growth. In addition to food, the more branching type corals provide shelter for juvenile fishes such as the yellow tang and aloiloi.

The mystery of Mother Nature is in Her continuing evolutionary ways, finding balance for all of Earth's natural resources. We can only monitor and observe these forever changing situations, as in the case of Ahihi-Kinau NAR. However, all is not lost in Ahihi-Kinau as wherever Mother Nature takes away, She always provides for someplace else. Additional surveys in 1998 along the shoreline of Ahihi-Kinau NAR revealed fish populations in quantities and diversity similar to many of the State's Marine Life Conservation Districts (MLCDs):

Comparison of Fish Counts in Ahihi-Kinau (inshore) to Other MLCDs in Terms of Numbers per Acre and Species Diversity

MLCD Location	*Date of Survey*	*Number of Fish per Acre*	*Number of Species Seen*
Honolua Bay, Maui	10/97	3764	76
Hanauma Bay, Oahu	5/97	3257	67
Ahihi-Kinau (inshore), Maui	**2/98**	**2839**	**83**
Manele-Hulopoe, Lanai	10/97	2686	86
Molokini Shoals, Maui	10/97	2034	92

Top Ten Most Abundant Species Observed Along Shoreline Surveys of the Ahihi-Kinau NAR in 1998

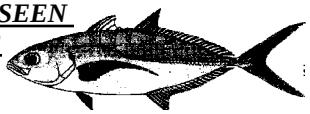
Rank	*Fish Species*	*Number of Fish Per Acre*
1	C. strigosus (kole)	684
2	A. nigrofuscus (lavendar tang)	478
3	Z. flavescens (yellow tang)	282
4	C. vanderbilti (blackfin damsel)	194
5	A. achilles (achilles tang)	185
6	M. niger (humu ele ele)	121
7	T. duperrey (saddle-back wrasse)	41
8	Family Scaridae (Uhu)	34
9	N. lituratus (clown tang)	30
10	A. sordidus (kupipi)	25

Although the resources are not what they were once described in the remonitored areas in Ahihi-Kinau, the shoreline fishery resources appear to have "weathered the storm". This is excellent news which means that areas like Ahihi-Kinau NAR can serve to provide the fishery stocks needed to spawn and restock other nearby areas.

Since fishing is not allowed within the boundaries of the Ahihi-Kinau NAR, you can clearly see that overfishing is not always the only factor that can contribute to declines in fish populations. Changes in habitat, such as those caused by natural disasters like hurricanes or man-made influences such as non-point source pollution and urban runoff, can also change the habitat causing fish populations to fluctuate. In the case of natural disasters, Mother Nature can always take care of Herself. The rest of us have to do our part to conserve and take care of our ocean resources by taking only what we need and limiting what we put into our ocean environment. You never know what may cause a fish or any other marine animal species to decline or increase.

X-FILES PROJECTS

HAVE YOU SEEN THIS FISH?



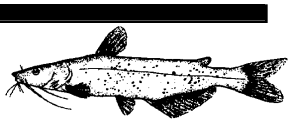
Have you been fishing along the shore lately and hooked a strange looking fish with a head like a papio and the body of an omaka? You're not alone! Toward the end of last year fishermen have been catching this fish from the Big Island to Kauai. They say that it's been hanging around with the papio and akule. No, it's not a hybrid. Bishop Museum's Ichthyology Department has identified this fishas the *Green Jack* or Caranx caballus which normally occurs off the coasts of Southern California to Peru. So what is it doing in Hawaiian waters?

Remember early last year when the El Nino was at its peak and fish such as ahi, ono, and marlin were being caught along the western coast of the mainland? The theory behind this is that as the ocean waters became warmer from the El Nino, this expanded the habitat range of the ahi, ono, and marlin causing them to travel as far as the west coast. Toward the end of last year, we experienced a La Nina which causes a cooling effect in ocean waters. It's not proven, but it is suspected that this cooling of the ocean around Hawaii has allowed cooler water species, such as the *green jack*, to occur here. Actually, records show that this fish has made an appearance in Hawaii before some time prior to 1960. It was considered a rare occurrence back then. However this time around, it's not considered real common, but fishermen have been picking up a few here and there, up to a dozen at the most. Since there appears to be quite a few, people have been wondering as to whether the *green jack* will hang around and reproduce in Hawaii even after the La Nina subsides. This probably will not happen, but you never know. It is expected that these fish will disappear in time like it has done before.

In case you were wondering, yes, this fish is an edible species, so feel free to indulge. Since the *green jack* is in the same family as the ulua, omaka, akule, and opelu, it should taste somewhat similar. If you catch one of these fish, you can identify it by the olive to dark bluish green color on the top and silvery gray to golden color below. It also has a very distinct dark spot on the upper edge of the gill cover. The ones being caught here measure between 10 to 15 inches in length.

FRESHWATER FISHING

NUUANU CATFISH



Maintaining the catfish population at Nuuanu Reservoir for freshwater sportfishing is also another project that is funded through the Federal Sportfish Restoration Program. Federal funds, along with State matching amounts are used in part to stock and maintain the channel catfish population in Nuuanu Reservoir. The following are some statistics from last year:

Nuuanu Reservoir Catfish Openings

	76th Opening May 1998	*77th Opening Aug. 1998*	*78th Opening Nov. 1998*
# of anglers	1962	2378	2007
# of fish caught	1384	1116	590
Ave. length	18.23 inches	17.51 inches	18.3 inches

	76th Opening May 1998	*77th Opening Aug. 1998*	*78th Opening Nov. 1998*
Ave. weight	2.49 lbs.	2.16 lbs.	2.76 lbs.
largest fish caught	31.5 inches at 16 lbs. 14 oz.	29.5 inches at 14 lbs. 6 oz.	19 lbs 2 oz.

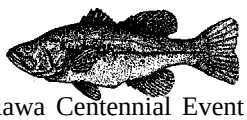
As noted earlier, the next opening is May 1999. Remember to put in your application cards and renew your freshwater fishing license if you need to. The bag limit is two catfish per angler. Cards should be available around April 1st at the **DLNR Visitor Center** in the Kalanimoku Building, Room 131, and other licensing agents. The deadline for applications is April 24th. If you missed this deadline, the next opening is for August 1999 and application cards should be available in July.

WAHIAWA PFA

Guess what? THEY'RE FINALLY GONE! YES, believe it or not, they're finally gone. All of the Wahiawa Public Fishing Area is again open to fishing. Division staff were finally able to say "goodbye" to the last water hyacinth this past December. Due to the high water level in the reservoir, spraying of herbicide (approved by EPA for use in the aquatic environment) & manual removal, all the water hyacinth has been eradicated from the reservoir. But BEWARE, because the spores from the flowering water hyacinths can remain dormant and viable for up to 10 years. Weekly surveys are being conducted for any new plants growing from these spores. Mahalo to everyone that helped!

If you see water hyacinths or any other floating aquatic plants in the reservoir when you go fishing, please help us by removing them or call DAR at 587-0110. Remember, it is your fishing hole that will be affected.

A DAY AT LAKE WILSON



This was a Wahiawa Centennial Event that was held on November 8, 1998 at the Wahiawa Freshwater State Recreational Area from 9:00 am to 3 pm. The event was a collaborative effort between the Wahiawa Community & Business Association, Hawaii Freshwater Fishing Association, Wahiawa Intermediate School & the Department of Land & Natural Resources, Division of Aquatic Resources. The purpose of the event was to create public awareness of the many attributes of Lake Wilson, such as its scenic beauty of flora and fauna, & its potential as a major recreational area for fishing and other outdoor activities. The event featured boat tours of the lake, release of tagged bass fingerlings, informational displays & presentations, fishing demonstrations and displays, fishing game and crafts, and a hiking tour of the State Park. The event was featured on three television stations and was so successful that it attracted over 1,000 people with the fishing club only being able to accommodate only 500 individuals on their boat tours over the course of the day. MAHALO to all those that volunteered & made this day a success!

OFFSHORE PROJECTS

ʻŌPAKAPAKA TAGGING UPDATE

The Division conducted tagging studies in an effort to better monitor and understand our valuable bottomfish resources. During 1989 to 1994, approximately 4,000 *ʻōpakapaka* were tagged and released off Oahu and in Maui County. Although there have been no further tagging efforts due to the retirement of the senior project biologist, submittal of tags and information by cooperating fishermen and data collection on recoveries have continued. The following chart will give you some of the information collected:

	7/1/95 to 6/30/96	*7/1/96 to 6/30/97*	*7/1/97 to 6/30/98*
estimated growth rate	2" /yr	2" /yr	2" /yr
longest days of freedom	1,638 days	2,176 days (almost 6 years!)	2,339 days (= 6.4 years)
farthest distance traveled	235 nautical miles	80 nautical miles	41 nautical miles
largest fish caught	23" FL at 6.5 lbs	26" FL at about 9 lbs.	26.5" FL at about 11 lbs.
growth of largest fish caught over time tagged	5"	11"	9.5"

Current Tag Recoveries (fish recovered between 7/1/96 to 6/30/97):

Number Recovered	Tagging Site	Recovery Site
* 1	Ewa	Molokaʻi
16	Molokaʻi	Molokaʻi

** Some notable movement of tagged ʻŌpakapaka*

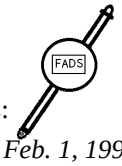
This behavior of channel crossing was previously unknown to both fishermen and scientists, and has implications for fishery management. The Division will pay $10 for each tag returned with the following information:

1. WHO (name & address of fisherman)
2. WHEN (date)
3. WHERE (location of capture)
4. DEPTH (fathoms)
5. SIZE (tip of mouth to fork of tail in inches)

FOR REWARD!
Notify any DAR office:

Oʻahu	587-0094
Maui	243-5294
Kauaʻi	274-3344
Hawaiʻi	974-6201
Molokaʻi	567-6696

FAD PROJECT



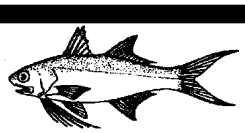
Here is the most recent update of missing FADs:

MISSING FADs *(as of Feb. 1, 1999):*

FAD	Location	Island
E	Leleiwi	Hawaiʻi
F	Kailua-Kona	Hawaiʻi
QQ	Makuu	Hawaiʻi
Q	Pawela Point	Maui
N	Cape Halawa (Lamaloa Head)	Molokaʻi
WK	Wailua	Kauaʻi
T	Makapuu	Oʻahu
X	Kahuku	Oʻahu

For current locations and/or more information, contact Warren Cortez at 848-2939. Also, if you know of any FADs that broke loose, see any light out or have any other comments, please give Warren a call.

FISH FACTS



Polydactylus sexfilis
(Pacific Threadfin, Moi)

SIZES
Length: specimens can reach up to lengths of 18 inches. Maximum length recorded is 24 inches.
Weight: maximum known weight is 7 pounds.

BREEDING
Sexual Maturity: Moi undergo sex reversal in which all fish start out life as males and eventually change to females. Males become sexually mature at about 10 inches in fork length. Before becoming fully mature females, there is a brief period when the fish are found to possess both male and female reproductive organs. Fully mature females can be found at fork lengths of 16 inches and over.
Spawning: spawning season starts around May to June and runs through October. They spawn about once a month at night during the last quarter phase of the moon.

LIFESTYLE
Distribution: Islands from Hawaii and French Polynesia to Mauritius, Seychelles, Kenya, and many islands of the northern Indian Ocean.
Habitat: Adults inhabit inshore rocky and sandy areas, frequently in zones of turbulence. Small fishes occur in schools along beaches and in sheltered coves from May through August.
Diet: Primarily feeds on invertebrates such as shrimps, crabs, and polychaete worms.
Life Span: Unknown.

RELATED SPECIES
The moi is a member of the Threadfin Fish Family. There are 33 species in this family, but only one species is found in Hawaiian waters. Threadfins are unique in that the lower rays of their pectoral fins are separated and developed into long slender filaments. When searching for food, these filaments are extended forward to trail over the bottom. Moi is a highly desirable food fish, but is not very common in large quantities. In the days of old Hawaii, moi was reserved for the chiefs. Commoners were not allowed to eat moi. Today, moi can be cultured in larger quantities thanks to aquaculture. Cultured moi is also being used for stock enhancement projects. Commercial landings for moi in 1996 was 700 pounds for the state. The average wholesale value of those pounds sold is about $4.36 per pound.
The following table will give you an idea of how fast these fish grow and how old they are. Please note that these are just ball park figures and meant only to give you a general idea on the relationship of length, weight, and age.

Length, Weight and Age of Moi

Fork Length (inches)	Weight (pounds)	Age (years)
2	0.004 (< 1 oz.)	-
4	0.04 (0.5 oz.)	-
6	0.14 (2.2 oz.)	0.2 (2 mo.)
8	0.36 (5.7 oz.)	0.5 (5.6 mo.)
10	0.75	0.9 (11 mo.)
12	1.3	1,5
14	2.25	2.5
16	3.5	3.75
18	5	5.4
20	7	7.4